USER MANUAL

UniTraQ International Corp. All right reserved, © 2010

2F., No.136, Ziqiang S. Rd., Zhubei City, Hsinchu County 30264, Taiwan (R.O.C.)
TEL：886-3-6578491 FAX：886-3-6578492

MADE IN TAIWAN

1. Introduction 3
2. Features 3
3. Applications 4
4. Electrical Specifications 4
4.1 General Specification 4
4.2 GSM/GPRS Specification 5
4.3 GPS Specification 5
5. USB Interface 6
5.1 Battery Charging 6
5.2 Parameters Setting 6
6. Button/Switch Indication 6
Slide switch 6
Panic Key 6
7. LED Indication 7
7.1 Power On/Off status 7
7.2 GPS Status 7
7.3 GSM/GPRS Status 7
7.4 Charging Status 7
8. DEVICE CONFIGURATION 8
8.1 USB driver installation procedure 8
8.2 Min Tracker Setting description 10
8.3 Upgrade Firmware 11
8.4 Short Message Service Control 12

1. Introduction

The MT-900 is a portable compact tracking device for personal safety and asset monitoring. It combines high sensitivity GPS and quad band GSM/GPRS to perform the powerful security application.

The MT-900 can, based on quad band GSM/GPRS network and GPS satellite positioning system, track far-way objects conveniently by Short Message or internet. It can be used for child protection, anti-kidnapping, vehicle tracking, pets go out tracking, panic assistant for the aged, and much more.

2. Features

- Available Quad band GSM/GPRS 850/900/1800/1900 MHz
- GPS 50 channels all-in-view tracking.
- GPS high sensitivity -159 dBm.
- Real time dynamic reporting based on time interval.
- Data logger capability built in with 4Mega bytes flash memory to record time stamp, position and event status.(option)
- 3D G-sensor to report motion sensing, accident from ±4G.(option)
- Remote command control by SMS or GPRS network.
- Emergency call and notification, plus SMS sending location.
- Geo-fence capability with out of fencing notification.
- Over speed notification capability.
- Low battery notification capability.
- Power management for low power consumption.
- Surrounding audio monitoring capability.(option)
- Mini USB for charging and data exchanging.
- Personal service center program support.
- Over the air(OTA) firmware update (option)

3. Applications

- Personal safety
- Security – safety of security guard, locate asset
- Asset unauthorized movement detection
- Child care – locate missing kids, track whereabouts of children
- Disables' safety – seniors' safety
- Vehicle tracking
- Outdoor recreation – travel, hiking, bike riding
- Animal tracking – track pets' location

4. Electrical Specifications

4.1 General Specification

Parameter	**specification**
Operating Voltage	3.4 V
Operating Temperature	-20 ℃ ~ +60 ℃
Storage Temperature	-40 ℃ ~ +85 ℃
Power Consumption	Full power 150 mA
	Idle mode < 6 mA
Battery	600mAh
Battery Voltage	Min:3.4V, Typ:3.7V, Max:4.2V
SIM card type	1.8V, 3V
LED Status Indicator	Power/ GPRS/GPS
Dimension	53 x 37 x 20 mm
Weight	39g

4.2 GSM/GPRS Specification

Parameter	specification
Frequency	Qua dband 850MHz/900MHz/1800MHz/1900MHz
Output power	Class 4(2W) for EGSM 850 and 900 Class 1(1W) for GSM 1800 and 1900
Protocol support	TCP/UDP/PPP
GPRS Multi-slot	Class 10
GPRS Mobile station	Class B
Coding scheme	CS1,CS2,CS3,CS4
Downlink/ Uplink max. Operating temperature	85.6Kbps/42.8 kbps -20 ℃~ +55 ℃
Storage temperature	-40 ℃~+85 ℃
Current consumption	Idle mode: <1.6 mA GSM : < 300mA GPRS (2Tx,3Rx power level 10): < 410mA

4.3 GPS Specification

Parameter	specification
Frequency	L1, 1575.42MHz
Channels	50 channel all in view
Acquisition sensitivity	-142dBm
Tracking sensitivity	-159dBm
TTFF hot start warm start cold start	< 1 sec < 36 sec < 36 sec
Signal Reacquisition	<1s
Update Rate	1Hz (standard)
Tracking current	40mA
Operating temperature	-40℃ ~ +85℃
Datum	WGS-84(Default)
Protocol	NMEA-0183 V3.01
Dynamics	4G (39.2m/sec2)

5. USB Interface

5.1 Battery Charging

1. Charging by a computer USB port:

Connect the supplied USB cable between the computer USB port and the mini USB connector of the MT-900 device.

2. Charging by a cigarette lighter power adapter:

a. Plug the USB connector of the supplied USB cable to the USB connector of the cigarette lighter power adapter.

b. Connect the mini USB plug of the USB cable to the mini USB port of the MT-900 device.

3. Charging by AC adapter:

Connect the supplied AC adapter to the mini USB port of the MT-900 device.

5.2 Parameters Setting

Connect the supplied USB cable between the computer USB port and the mini USB connector of the MT-900 device.

The USB interface is also a command and data interface which allows users to download the firmware and set configurations.

6. Button/Switch Indication

Slide switch

Power on/off MT900

Panic Key

Press and hold the **Panic** key for 3 seconds to activate the device to perform the emergency notification and followed the pre-defined setting.

7. LED Indication

7.1 Power On/Off status

LED mode	Operation status
OFF	POWER OFF
ON	POWER ON
FLASH	IDEL MODE

7.2 GPS Status

For the GPS status indicator through LED, detailed information is shown in the following table

LED mode	Operation status
OFF	un-fixed
FLASH	fixed

7.3 GSM/GPRS Status

For the GPRS/GSM status indicator through LED, detailed the information is shown in the following table.

LED mode	Operation status
OFF	GSM/GPRS is not running
FLASH	Indicates GPRS data transfer:

7.4 Charging Status

LED mode	Operation status
ON	Charging
OFF	Finish

8. DEVICE CONFIGURATION

8.1 USB driver installation procedure

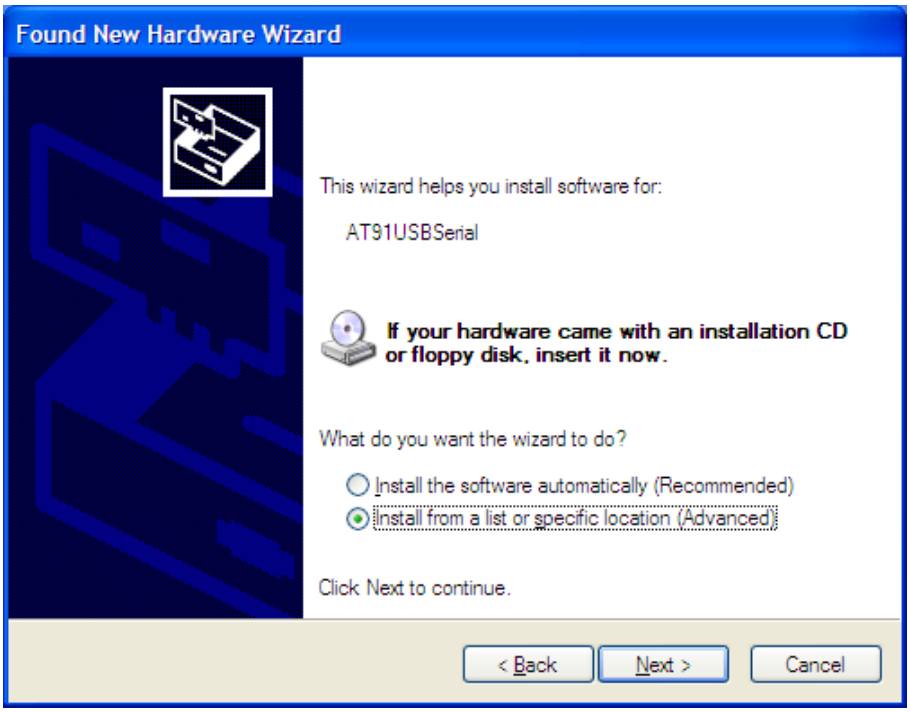
Connect MT-900 device to PC, choose “No, not this time”

then click Next button

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

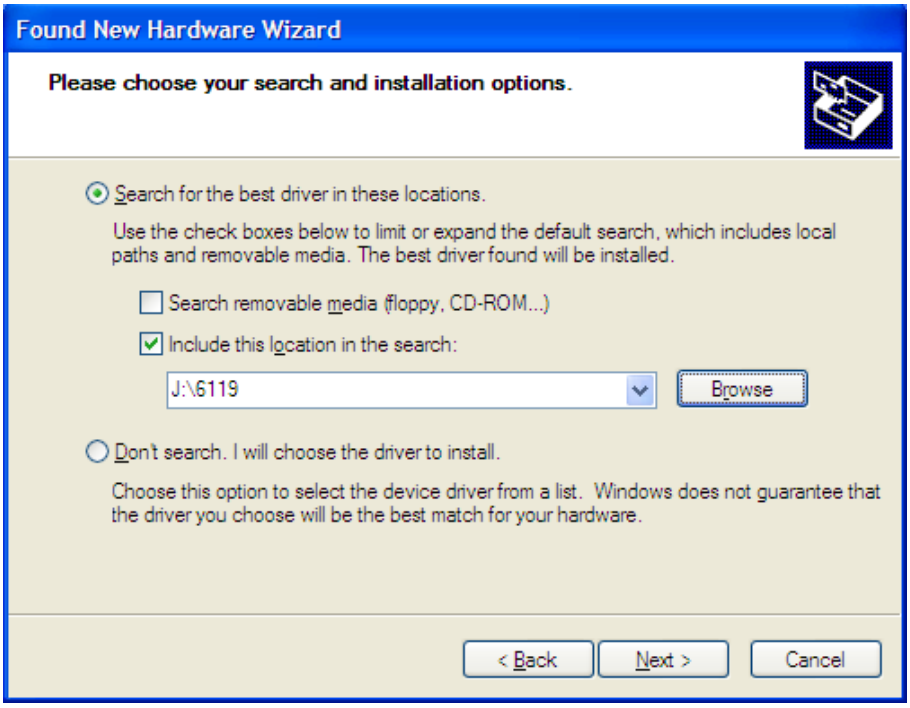
Choose “install from a list or specific location(Advanced)”,

then click Next button

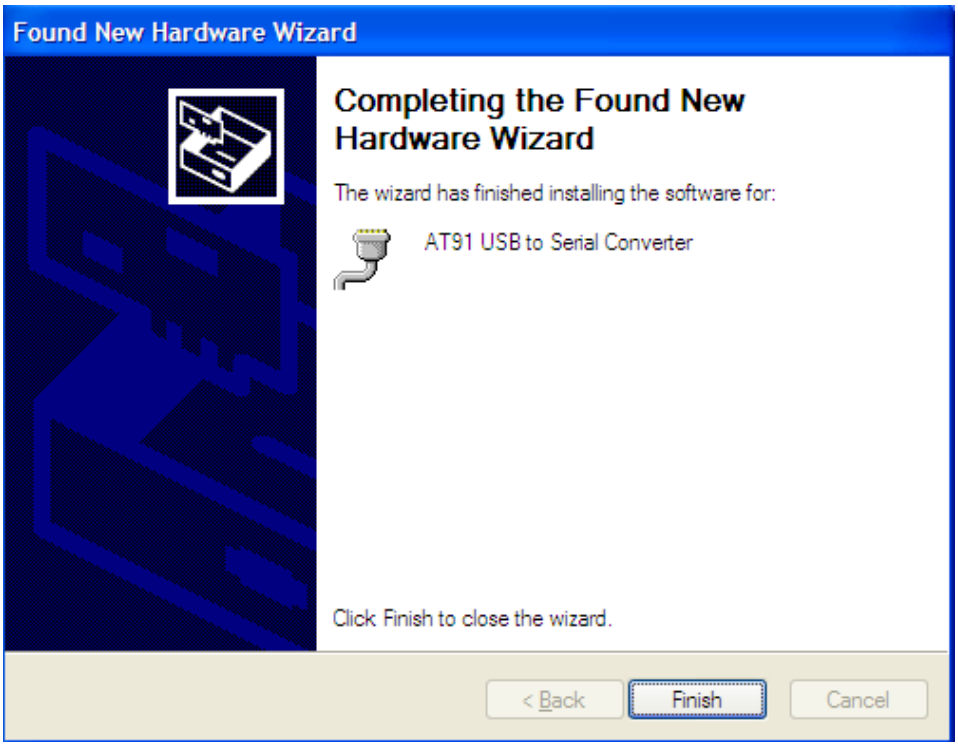

Found New Hardware Wizard
This wizard helps you install software for:
AT91USBSerial
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Click the Browser button to search the installation file, then

click Next button to install USB driver


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
J:\6119
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

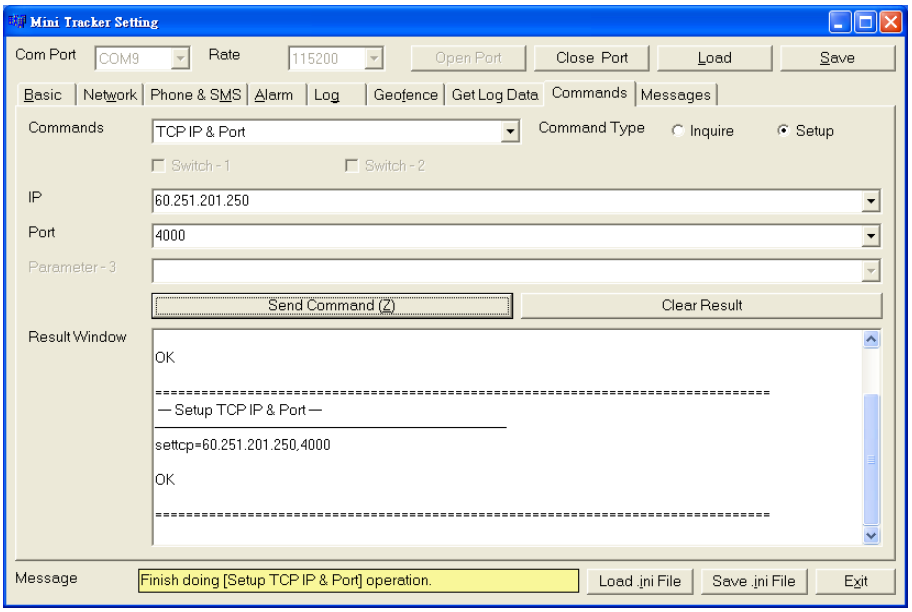
Click Finish button to complet


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
AT91 USB to Serial Converter
Click Finish to close the wizard.
< Back
Finish
Cancel

8.2 Min Tracker Setting description

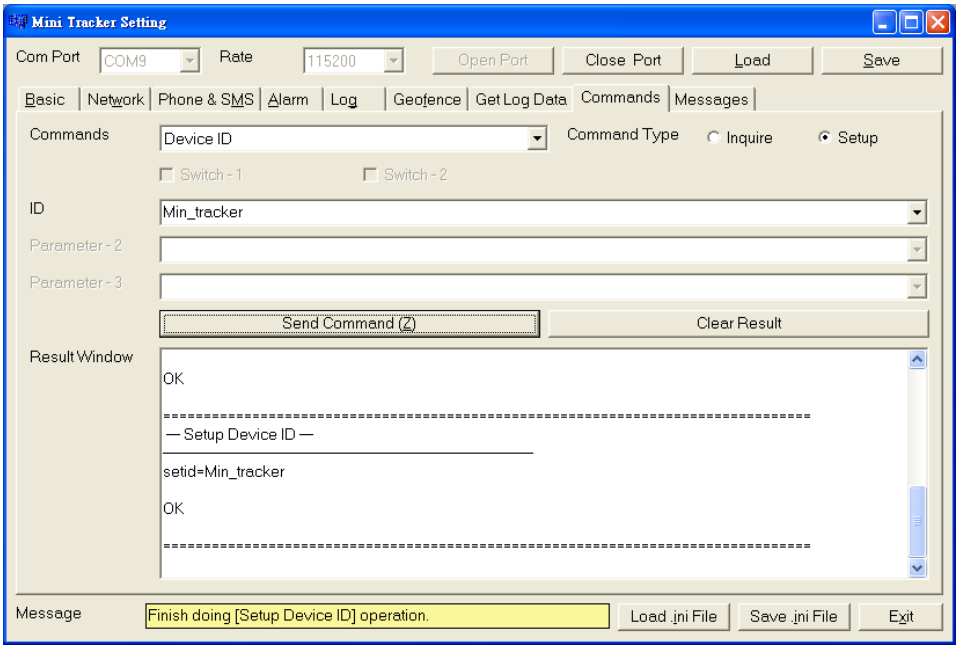
Set TCP IP & Port:

Run Mini Tracker Setting tool software, then it will show the setting environment. Choose TCP IP & Port Set in commands column. Follow the below picture setting, then click the "Send command" button, then you will see OK in Result Window.



Set Device ID:

Choose Device ID in Commands column. Follow the below picture setting, then click the "Send command" button, then you will see OK in Result Window



8.3 Upgrade Firmware

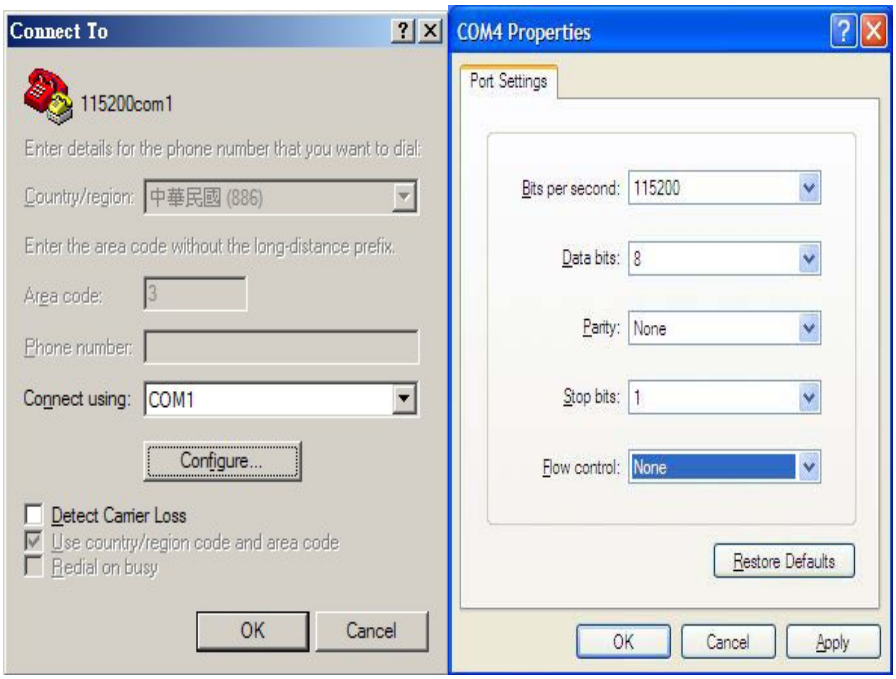
Power on the device. Using USB cable connects the device with PC.

Check if the device access to the PC's COM port.

My Computer>Properties>Hardware>Device >Manager>Ports (COM&LPT)

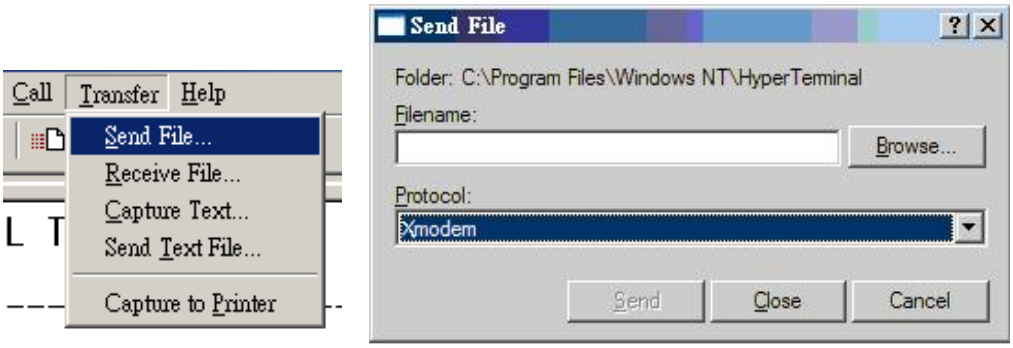
Open the Hyper Terminal, and select the corresponding COM.

The baud rate is 115200, 8 data bits, none parity check, 1 stop bit, none flow control.



Input "updmtfm" and Enter in HyperTerminal.

Select the file which to be downloaded via "Transfer" -> "Send File" of the HyperTerminal as the figure.



After all, press the "Send" button to download file from PC.

And then you will see the download progress.

8.4 Short Message Service Control

Introduction

The tracker also provides another way for control access or configuration. From the Short Message Service, the user can use the defined number mobile phone to control the tracker. After received the SMS, the tracker will perform as the request command and will response to the mobile phone with SMS.

General Rule

Password: pppppp, 6 ~12 alphanumeric characters.

*: Start symbol.

#: End symbol.

ID: Tracker Identification number, 4 ~ 16 alphanumeric characters.

No Space character is allowed, only "," between the * and #.

RX: receive from mobile phone.

TX: response to mobile phone.

GPS location information: the format will be yy/mm/dd,hh:mm:ss,Elongitude,Nlatitude,Sxxx.x,Cxxx.x

x: 0~9 digital number.

Command Description

Set Tracker ID

Function	Set up the ID into the tracker.	
Format	RX	*ID,PPPPPP,setid,new ID,new ID#
Response	TX	New ID Setup OK
or	TX	Old ID Setup fail

Set Cellular Number

Function	Set up the phone number(s) into the tracker.	
Format	RX	*ID,PPPPPP,fonsetup,phone - 1(, phone - 2, phone - 3)#
Response	TX	ID fonsetup OK
or	TX	ID fonsetup fail

Set Time Interval

Function	Set up the location response time interval into the tracker, the unit is seconds.	
Format	RX	*ID,PPPPPP,tintsetup,xxxxx#
Response	TX	ID tintsetup OK
or	TX	ID tintsetup fail

Enable and Set up Geofence

Function	Set up the radius of the Geofence into the tracker, the unit is meters.	
Format	RX	*ID,PPPPPP,geofenceon,xxxxx#
Response	TX	ID geofence ON,xxxxx,GPS location information
or	TX	ID geofence on fail

Disable Geofence

Function	Disable the Geofence function of the tracker.	
Format	RX	*ID,PPPPPP,geofenceoff#
Response	TX	ID geofence OFF
or	TX	ID geofence off fail

Set Tracker Password

Function	Set up the password into the tracker.	
Format	RX	*ID,PPPPPP,setpass,new password,new password#
Response	TX	ID setpass OK
or	TX	ID setpass fail

Inquire Current Location

Function	Inquire the location information from the tracker.	
Format	RX	*ID,PPPPPP,gpsinq#
Response	TX	ID,GPS location information
or	TX	ID gpsinq fail

Inquire IMEI code

Function	Inquire the GSM IMEI code from the tracker.	
Format	RX	*ID,PPPPPP,getimei#
Response	TX	ID 15 decimal of IMEI
or	TX	ID getimei fail

Set IP and Port

Function	Set up the IP and Port of the server into the tracker.	
Format	RX	*ID,PPPPPP,ippsetup,xxx.xxx.xxx.xxx,xxxxx#
Response	TX	ID IPxxx.xxx.xxx.xxx Portxxxxx
or	TX	ID ippsetup fail

Inquire Battery Voltage

Function	Inquire the battery voltage from the tracker.	
Format	RX	*ID,PPPPPP,batteryinq#
Response	TX	ID battery x.xx
or	TX	ID battery fail

Set Notification Way

Function	Select notification from the GPRS or GSM SMS.	
Format	RX	*ID,PPPPPP,notify,GPRS on/ff,SMS on/off#
Response	TX	ID notify GPRS on/ff,SMS on/off
or	TX	ID notify fail

Enable and Set up Over Speed Detection

Function	Set up the speed threshold for alarm detection into the tracker, the unit is kilometer.	
Format	RX	*ID,PPPPPP,overspeedon,xxx #
Response	TX	ID overspeed ON xxx
or	TX	ID overspeed fail

Disable Over Speed Detection

Function	Disable the over speed detection function.	
Format	RX	*ID,PPPPPP,overspeedoff#
Response	TX	ID overspeed OFF
or	TX	ID overspeed fail

Enable Unauthorized Movement Detection

Function	Activate the movement detection function.	
Format	RX	*ID,PPPPPP,movedeton#
Response	TX	ID move detection ON
or	TX	ID move detection fail

Disable Unauthorized Movement Detection

Function	Disable the movement detection function.	
Format	RX	*ID,PPPPPP,movedetoff#
Response	TX	ID move detection OFF
or	TX	ID move detection fail

Set Idle Time Period

Function	Set up the system idle time interval for the tracker to get into the sleep mode, the unit is seconds.	
Format	RX	*ID,PPPPPP,tidlesetup,xxxxx #
Response	TX	ID tidlesetup OK
or	TX	ID tidlesetup fail

Enable Audio Monitoring

Function	Activate the audio monitoring function.	
Format	RX	*ID,PPPPPP,moniteron#
Response	TX	ID audio monitor ON
or	TX	ID audio monitor fail

Disable Audio Monitoring

Function	Disable the audio monitoring function.	
Format	RX	*ID,PPPPPP,moniteroff#
Response	TX	ID audio monitor OFF
or	TX	ID audio monitor fail

UniTraQ International Corp

2F., No.136, Ziqiang S. Rd., Zhubei City, Hsinchu County 30264, Taiwan (R.O.C.)

TEL：886-3-6578491 FAX：886-3-6578492

Email support@unitraq.com
Website www.unitraq.com

© 2010 UniTraQ International Corp. All rights reserved.
Not to be reproduced in whole or part for any purpose without written permission of UniTraQ International Corp ("UniTraQ") Information provided by UniTraQ is believed to be accurate and reliable. These materials are provided by UniTraQ as a service to its customers and may be used for informational purposes only. UniTraQ assumes no responsibility for errors or omissions in these materials, nor for its use. UniTraQ reserves the right to change specification at any time without notice.

These materials are provides "as is" without warranty of any kind, either expressed or implied, relating to sale and/or use of UniTraQ products including liability or warranties relating to fitness for a particular purpose, consequential or incidental damages, merchantability, or infringement of any patent, copyright or other intellectual property right. UniTraQ further does not warrant the accuracy or completeness of the information, text, graphics or other items contained within these materials. UniTraQ shall not be liable for any special, indirect, incidental, or consequential damages, including without limitation, lost revenues or lost profits, which may result from the use of these materials.

UniTraQ products are not intended for use in medical, life-support devices, or applications involving potential risk of death, personal injury, or severe property damage in case of failure of the product.